



# KINDER MORGAN ENERGY PARTNERS



Distribution Implications For  
California With Increased Use Of  
Ethanol

# Who Is Kinder Morgan ?

- KMEP owns and operates one of the largest product pipeline and terminal systems in the country.
- Operating more than 30,000 miles of natural gas and products pipelines.
- The nations leading provider of CO<sub>2</sub> for use in enhanced oil recovery projects.

# Who Is Kinder Morgan

## Kinder Morgan's Pacific Region

- Over 3,300 miles of pipeline.
- Transporting over 1 million barrels of refined products (gasoline, diesel, commercial and military turbine) per day.
- Terminal Locations in California, Arizona, Nevada, Oregon, Texas and New Mexico.





# Current Conditions Under CARB Phase 2

- Refineries Blend MTBE into gasoline to meet state and federal oxygen requirements (approximately 11% volume).
- With MTBE, refineries benefit from octane which helps in production of premium gasoline.
- Gasoline meets all of the fuel specifications prior to shipment.



# Increasing Use Of Ethanol Talking Points

- Volume loss of 11% in pipeline shipments.
- Terminals do not have access for bulk receipt of ethanol (rail car and/or barge).
- Gasoline must be blended with ethanol at the terminal racks to meet final specifications.
- Environmental Issues?

# Reduction In Pipeline Volumes

Why not ship ethanol by pipeline

- Ethanol removes oxide scale from the internal pipe wall exposing fresh metal.
- Internal pipe wall is then subject to internal corrosion.
- Little evidence that corrosion inhibitors would be effective over long distances.
- Internal corrosion leads to leaks.

# Terminal Access For Bulk Ethanol Shipments

Pipelines and associated terminals were originally constructed in late 1950's and early 1960's in remote locations.

Urban sprawl has surrounded the terminals.

- Orange Terminal Neighbors: Arrowhead Pond, Anaheim Stadium, 16-Screen movie & restaurant complex.
- San Diego Terminal Neighbors: Qual-Com Stadium and luxury homes.



# Terminal Access For Bulk Ethanol Shipments

- Sacramento Terminal Neighbors: Homes, businesses and restaurants.

What's The Bottom Line:

- The only method for getting ethanol into terminals will be by truck.



# Rack Blending Of Ethanol

Currently Under CARB Phase 2

- Refinery testing and certification of fuel quality.
- Kinder Morgan random testing upon receipt.
- Kinder Morgan tank testing to ensure quality.

With ethanol blending, we have one opportunity to get it correct (you can't test every truck).



# Environmental & Safety Issues

The Key Is: Prevention – Prevention –  
Prevention

Materials Compatibility Issues:

- Epoxy Tank Coatings
- Teflon Seals & Rings

Water Treatment Systems: Future Standards?

Fire Hazards & Prevention



# What's The Impact On The Distribution System

We All Have To Work A Little Harder

- Industry coordination with ethanol producers and distributors for adequate supply.
- Coordination with transporters for efficient truck utilization and terminal off-loading of ethanol.





# What's The Impact On The Distribution System

We All Have To Work A Little Harder.

- Agency development and approval of standardized test methods to ensure ethanol quality.
- Engineer more effective methods to keep chemicals (petroleum, ethanol, MTBE) out of the environment.



# The Message Of The Day

The distribution system can handle the increasing use of ethanol.

Currently blend ethanol in Phoenix and Tucson Arizona, Reno and Las Vegas Nevada as well as Portland and Eugene Oregon.

In regards to California, it will take a cooperative effort by everyone.



We All Have To Work A Little Harder.